

BELL BOEING

The  Tiltrotor Team

A JOINT SERVICE PROGRAM

NEW TECHNOLOGIES for NEW AIRPLANES

AC-130U and CV-22 in the 21st Century



AC-130U Mission

Provide:

Precision strike at night, under all weather conditions with minimal collateral damage and extended combat persistence

- *Close air support*
- Armed Recce
- Interdiction
- Search and Rescue
- Command and Control
- Forward Air Control

AC-130U Status

- All 13 Aircraft Delivered and Operational with 4th SOS at Hurlburt Field, FL
 - Recently set C-130 non-stop flight record in deployment from Hurlburt to Korea
 - Deployed to Bosnia in support of NATO forces
- Gunship peculiar sub-system exceeding reliability predictions
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AC-130U Capabilities

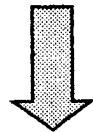
- APQ-180 Radar provides all-weather precision attack capability
- Fire Control enhancements provide dual target attack capability
- Enhanced situational awareness for all crew members
 - Reduced probability of fratricide
 - Enhanced survivability
 - Improved crew coordination/reduced workload
- All Light Level Television incorporates laser designator compatible with all modern laser guided munitions

AC-130U Near Term Improvements

- Increased radar resolution
 - Capture upgrades to F-15E radar
- Improved Fire Control Algorithms
 - Eliminate need to orbit target
 - Increased Stand-off range
 - Improved first shot accuracy
- Improved IFF
 - CSEL
 - Improved radar beacons
- Enhanced defensive systems
 - Low-Band jammer
 - DIRCM

AC-130U Near Term Improvements (cont.)

- Drag Reduction
- Non-lethal munitions for existing weapons
- GATM/GANS
- Reduction in Logistics Tail
- Enhanced Situational Awareness
 - Real Time in Cockpit
 - Transmission of gunship video to ground stations
 - Real time intel for individual soldier
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“Put the Foxhole in the Cockpit”

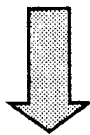
AC-130U Far Term Enhancements

- Advanced Weapons
 - Directed Energy Weapons
 - Microwave
 - ABL based technologies
 - Kinetic Energy Weapons
 - Non-lethal technologies
- Integration with UAV/RPV systems
- Exploitation of Spaced Based Systems
 - Targeting
 - Weapon Guidance
- Air Vehicle performance improvements
 - Signature
 - Powerplant

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AC-130U Far Term Enhancements

- Advanced Sensors
 - MM Wave
 - Ultra High Resolution SAR
 - Automatic Target Recognition
 - Sensor Fusion



“Put the Cockpit in the Foxhole”

CV-22 Mission

Provide:

**VTOL, Speed, Range, Flexibility and Survivability to
support SOF Operations Deep Within Hostile Territory**

- *Long range infil/exfil/resupply*
- Combat search and rescue
- Logistics support
- MEDEVAC

CV-22 Status

EMD Program on schedule

Air vehicle CDR scheduled for Sept 1998

Two EMD aircraft modified for CV-22 development

A/C #7 and #9

OPEVAL 2002

First procurement 2001

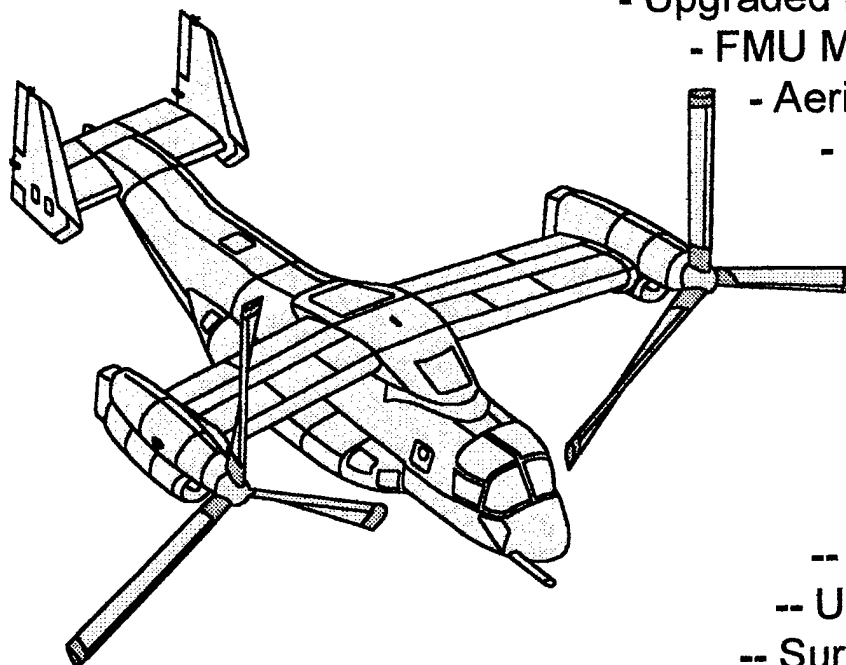
First delivery 2003

Below cost, on schedule

V-22 Configurations

MV-22:

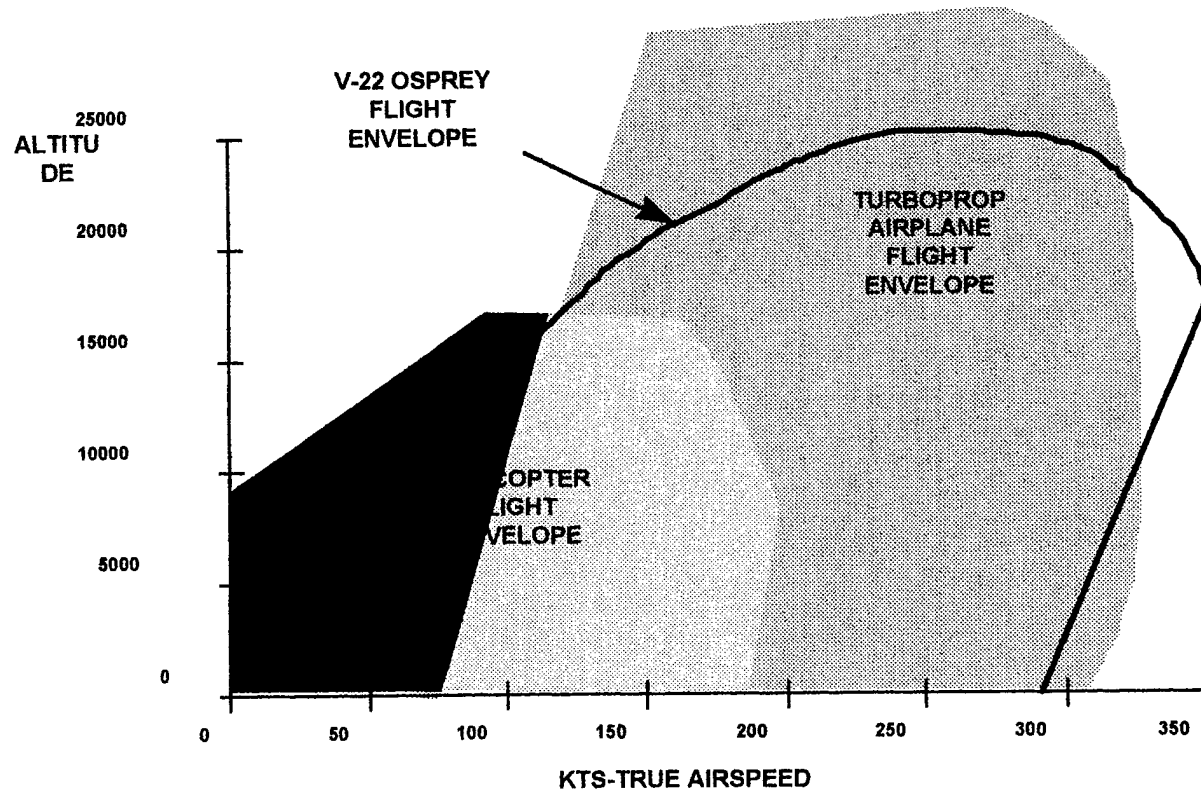
- 24 seats
- 6x6x24' cabin
- 1125 gal. fuel
- Fast rope
- Rescue Hoist
- NBC Protection
- Prov. for Nose Gun
- Triply redundant flt. cntls
- Anti- & De-icing
- Dual Ext. Cargo Hooks
- Avionics:
 - Dual 1553B Data Bus
 - Dual Msn Computers
 - INS / GPS
 - FLIR
 - Digital Map
 - 2 ARC-210 UHF/VHF radios
 - Radar Warning Rcvr
 - Missile Warning Rcvr
 - Laser Warning Rcvr
 - 60 rnds Flare/Chaff



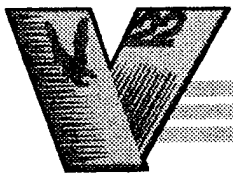
CV-22 = MV+:

- 900 gal. added internal fuel
- Cabin Aux Fuel Tank
- Upgraded FE Seat
- FMU Modifications
- Aerial Refuel Probe
- NBC Suit Connections
- Avionics:
 - TF/TA Radar
 - Radar Jammer
 - MATT
 - 4 DCS2000
- UHF/VHF radios w/SATCOM
- Upgraded AMC
- Upgraded Dig Map
- Survivor Locator
- Radar Warning Display
- Crash Position Indicator
- Upgraded IFF
- 90 add'l rnds Flare/Chaff

CV-22 Performance



**TWICE AS FAST AS
A HELICOPTER**



CV-22 New Technologies & Variants

- CV-22 New Technologies
 - Signature Reduction
 - Smart Blade Technology
 - Cabin Ballistic Blankets
- - Variants
 - Combat Search and Rescue
 - Tactical Refueling
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CV-22 Paradigm Shift

- The full scope of tiltrotor operational capabilities has yet to be explored
 - VTOL
 - 2 X Speed
 - 3 X Range
 - 3 to 50 X More Survivable
 - Expanded Battle Space Awareness
 - Self Deployable
 - Reduced Logistics Footprint

Yields unprecedented capabilities
“A new way to fly...and to fight”

Gunship Paradigm Shifts

- Cannot continue to fight gunships as we have in the past
 - Take advantage of increased situational awareness
 - Exploit fire control capabilities
 - Redefine crew taskings
- Need to further integrate gunship capabilities into the joint war-fighting force
 - Exploit sensor imagery in real time
 - Expand force multiplier capabilities
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